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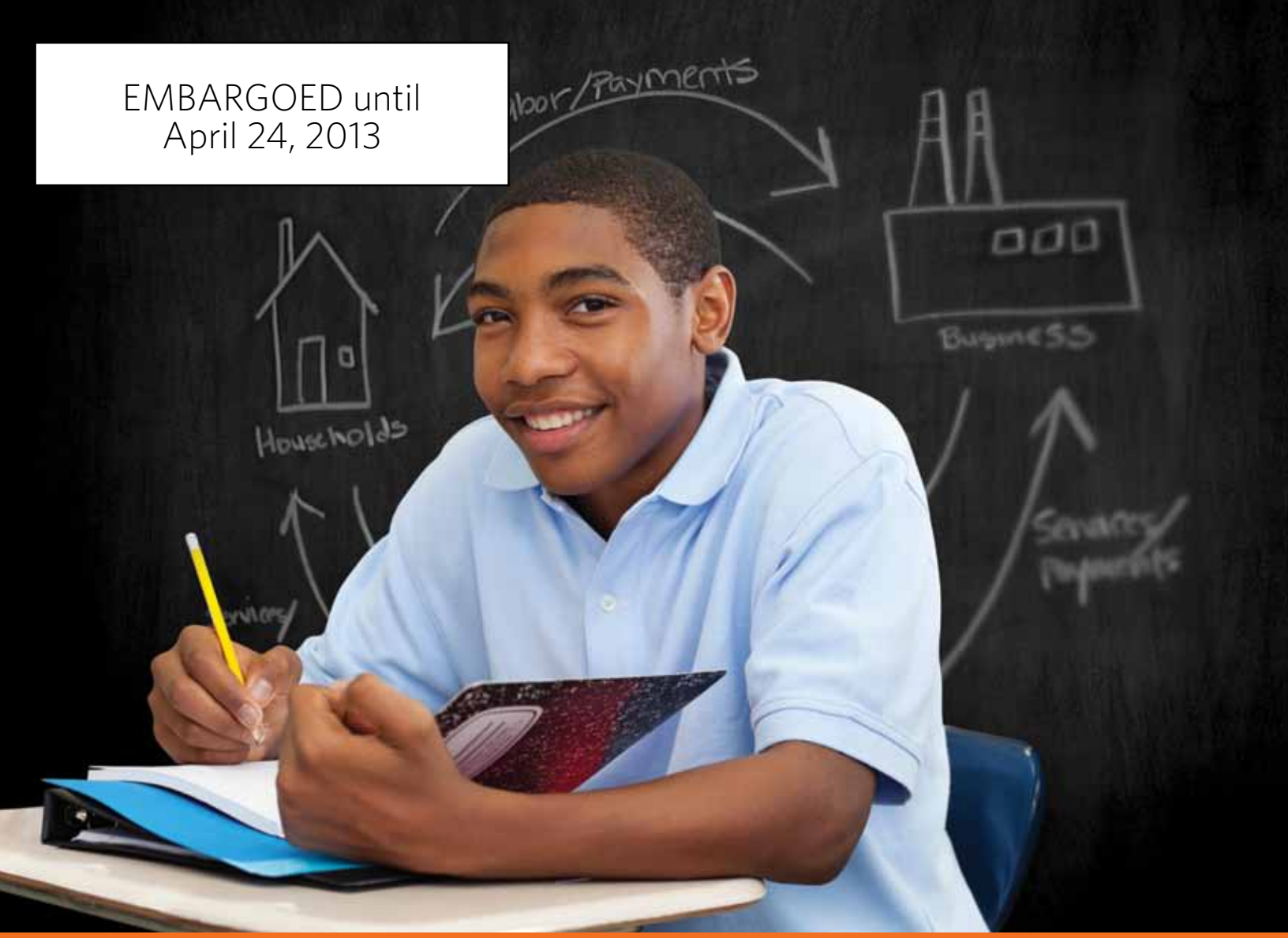


The Nation's Report Card

Economics 2012

NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS AT GRADE 12

ies NATIONAL CENTER FOR EDUCATION STATISTICS
Institute of Education Sciences

U.S. Department of Education
NCES 2013–453

Contents

What Is The Nation's Report Card™?

The Nation's Report Card™ informs the public about the academic achievement of elementary and secondary students in the United States. Report cards communicate the findings of the National Assessment of Educational Progress (NAEP), a continuing and nationally representative measure of achievement in various subjects over time.

Since 1969, NAEP assessments have been conducted periodically in reading, mathematics, science, writing, U.S. history, civics, geography, and other subjects. NAEP collects and reports information on student performance at the national and state levels, making the assessment an integral part of our nation's evaluation of the condition and progress of education. Only academic achievement data and related background information are collected. The privacy of individual students and their families is protected.

NAEP is a congressionally authorized project of the National Center for Education Statistics (NCES) within the Institute of Education Sciences of the U.S. Department of Education. The Commissioner of Education Statistics is responsible for carrying out the NAEP project. The National Assessment Governing Board oversees and sets policy for NAEP.

Executive Summary

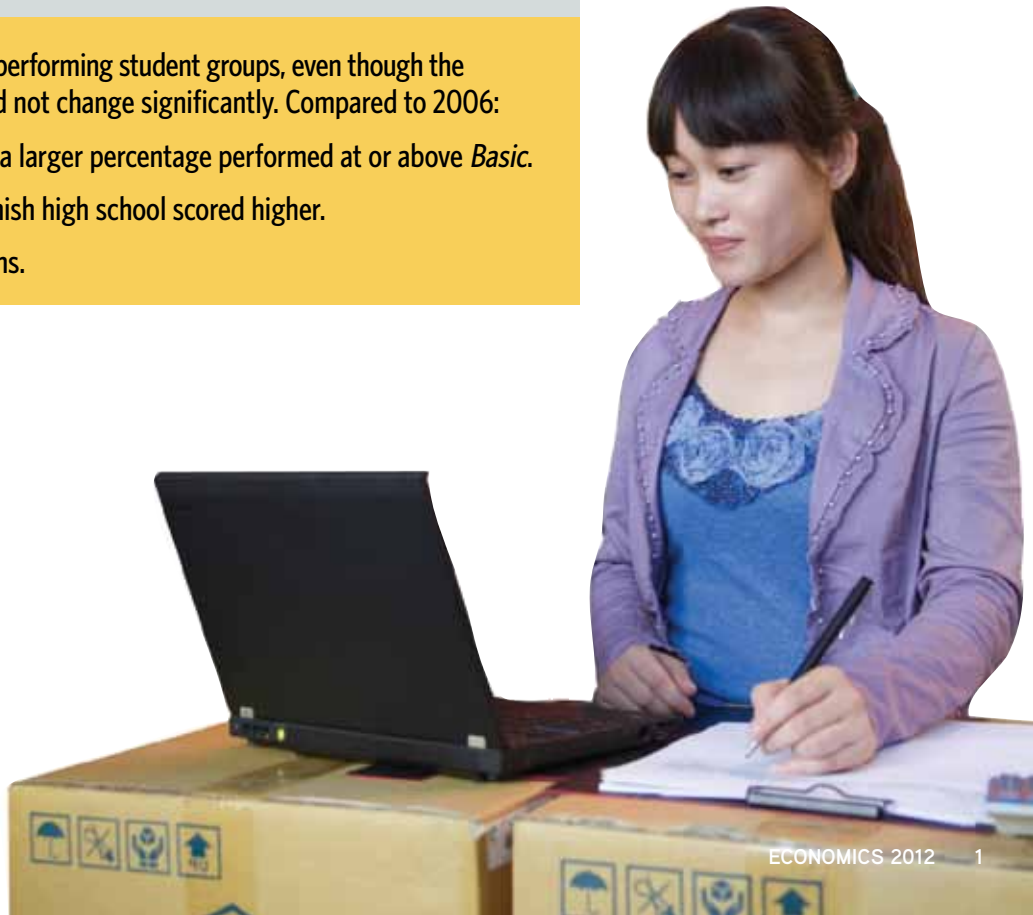
Economic literacy is vital for functioning effectively in today's society. Consumers need to manage their finances, investors need to plan for their future, and voters need to choose among competing economic plans. As students move on to college or enter the workforce, their understanding of the economy will help them become financially responsible citizens. The National Assessment of Educational Progress (NAEP) monitors students' attainment of these skills and knowledge with its twelfth-grade economics assessment.

First administered in 2006, the NAEP economics assessment measures twelfth-graders' understanding of a wide range of topics in three main content areas: market economy, national economy, and international economy. This report provides results of the economics assessment in 2012 based on a nationally representative sample of nearly 11,000 twelfth-graders. Results from 2012 are compared with those from 2006 to investigate whether our nation's high school seniors are becoming increasingly literate in economics.

Key Findings

Economics scores increased for some lower performing student groups, even though the overall average score for twelfth-graders did not change significantly. Compared to 2006:

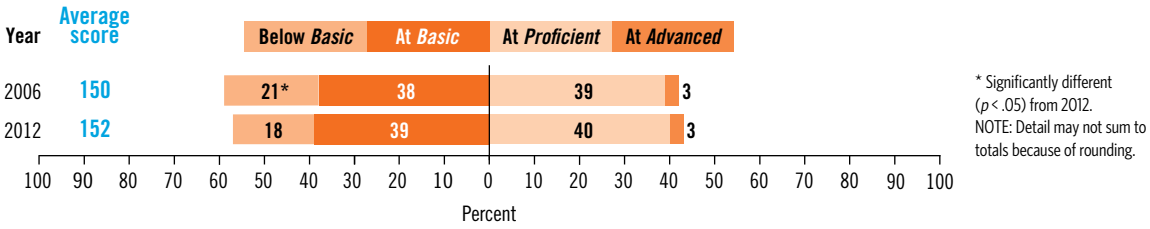
- **Hispanic students scored higher, and a larger percentage performed at or above *Basic*.**
- **Students with parents who did not finish high school scored higher.**
- **Lower performing students made gains.**



Larger percentage of students at or above the *Basic* level than in 2006

The only shift that occurred in economics achievement-level results between 2006 and 2012 appeared in the lower performance range. The percentage of twelfth-graders performing at or above *Basic* (which includes *Proficient* and *Advanced*) increased from 79 percent in 2006 to 82 percent in 2012 (**figure A**). The percentages of students at or above *Proficient* and at *Advanced*, however, did not change significantly.

Figure A. Average scores and achievement-level results in twelfth-grade NAEP economics: 2006 and 2012



Examples of Knowledge and Skills Demonstrated by Students Performing at Each Achievement Level

Basic

- Identify a trait of a market economy.
- Recognize an action of government that protects property rights.

Proficient

- Recognize the consumer price index as a measure of inflation.
- Provide a complete analysis of how competition by entrepreneurs creates innovation and economic growth.

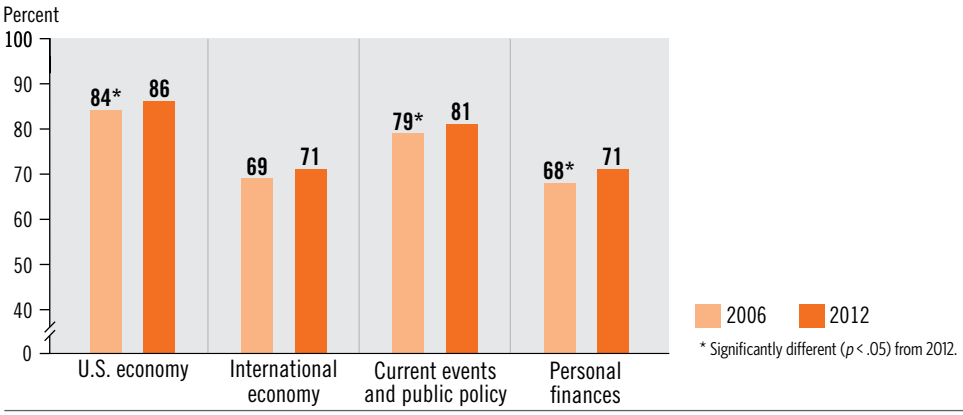
Advanced

- Identify how a change in the value of a currency affects imports and exports.
- Calculate the real interest rate given the current interest rate and the rate of inflation.

Majority of students say that coursework helps them understand economics-related topics

Students were asked if they thought that economics-related courses helped them understand various economics topics. Over two-thirds of twelfth-graders agreed that their coursework did help them (**figure B**). They were also more likely to agree that courses helped them understand the U.S. economy, current events and public policy, and personal finances in 2012 than in 2006.

Figure B. Percentage of students assessed in twelfth-grade NAEP economics who agreed that economics-related courses taken from ninth through twelfth grade helped them understand various topics: 2006 and 2012



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2006 and 2012 Economics Assessments.

Introduction

In the six years since NAEP's first economics assessment, news about the economy dominated the headlines and became a frequent topic of family conversations around the country. Turning on the television or accessing the Internet often meant encountering news about the local, national, or global economies. Opportunities to learn about the economy were clearly not confined to the classroom. In fact, about 90 percent of high school seniors reported in 2012 that they had learned about economics issues from radio, television, or the Internet. About the same percentage indicated they had taken an economics-related course during high school.

The 2012 National Assessment of Educational Progress (NAEP) measured twelfth-graders' knowledge of economic concepts and skills, and their ability to use this knowledge in real-life situations. The assessment was based on a framework that defines economic literacy broadly, and calls for students to apply their knowledge and skills in a variety of contexts. Additional details about the assessment framework, as well as information regarding how NAEP reports results, are provided below.

Assessment Framework

The National Assessment Governing Board oversees the development of NAEP frameworks that describe the specific knowledge and skills to be assessed in each subject. Frameworks incorporate ideas and input from subject area experts, school administrators, policymakers, teachers, parents, and others. The *Economics Framework for the 2012 National Assessment of Educational Progress* describes the types of questions that should be included and how they should be designed and scored. The 2006 and 2012 assessments were developed using the same framework, allowing results from the two assessment years to be compared.

The framework defines economic literacy as the ability to identify, analyze, and evaluate the consequences of individual decisions and public policy. Economic literacy also includes an understanding of

- the fundamental constraints imposed by limited resources, the resulting choices people have to make, and the trade-offs they face;
- how economies and markets work and how people function within them; and
- the benefits and costs of economic interaction and interdependence among people and nations.

Content areas

The economics assessment covers three main content areas. The percentage of assessment time devoted to each of the areas is shown in parentheses.

Market economy—addresses how individuals and businesses make economic choices as buyers and sellers in the marketplace (45 percent).

National economy—examines the overall conditions in the U.S. economy (40 percent).

International economy—explores how national economies interact with one another (15 percent).

Cognitive categories

Within each of the content areas, questions are designed to assess economics in three broad cognitive categories. About one-third of the assessment time is devoted to answering questions in each category.

Knowing—asks students to identify and recall information and to recognize economic terms and concepts.

Applying—requires students to describe or explain the relationship between information and economic concepts.

Reasoning—measures students' ability to use information and economic concepts accurately to solve problems, evaluate issues, and interpret situations.

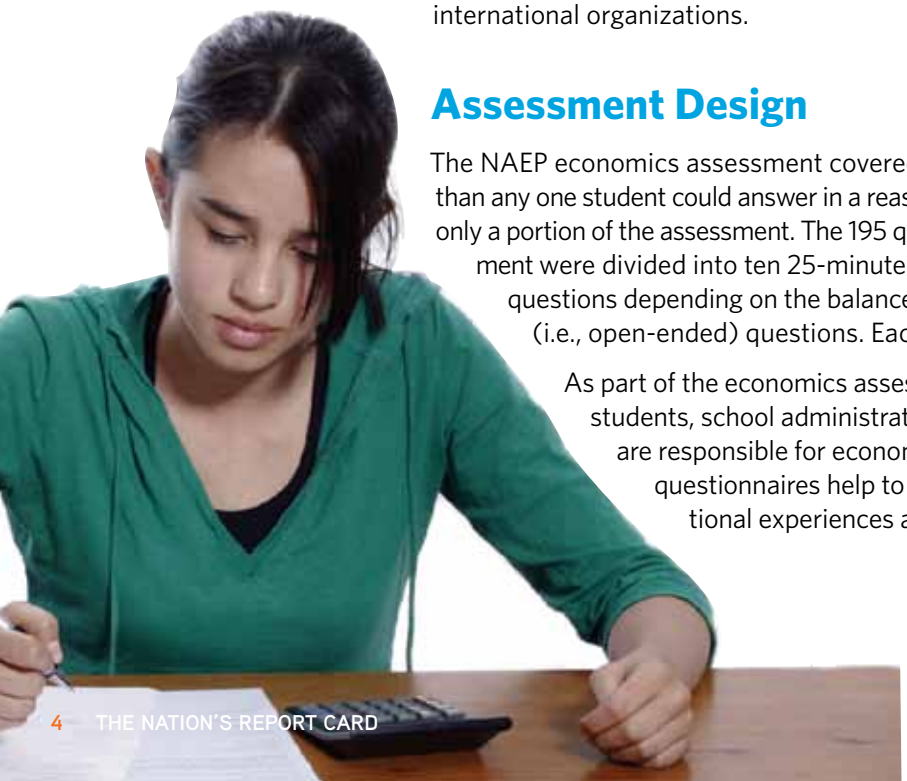
Assessment contexts

Because students may apply economics knowledge and skills inside and outside of school, the framework requires that 60 to 90 percent of the questions be set in various contexts. More specifically, it requires about 20 to 30 percent of the questions be set within each of the three contexts described below. A small percentage of questions were classified in multiple contexts or as context free.

Individual and household questions focus on topics related to personal finance (i.e., earning, spending, saving, borrowing, and investing).

Business questions relate to entrepreneurs, workers, producers, and investors.

Public questions concern government, policy, citizenship, and domestic and international organizations.



Assessment Design

The NAEP economics assessment covered a breadth of content and included more questions than any one student could answer in a reasonable amount of time. Therefore, each student took only a portion of the assessment. The 195 questions that made up the entire twelfth-grade assessment were divided into ten 25-minute sections. Each section contained between 18 and 21 questions depending on the balance between multiple-choice and constructed-response (i.e., open-ended) questions. Each student responded to questions in two sections.

As part of the economics assessment, survey questionnaires were completed by students, school administrators, and the heads of the high school departments who are responsible for economics-related courses. The data obtained from these questionnaires help to provide additional information about students' educational experiences and a context for understanding the assessment results.

Reporting NAEP Results

The 2012 economics assessment results are based on a nationally representative sample of 10,900 twelfth-grade students in 480 public and private schools. The sample design for this assessment was not intended to report results for individual states or large urban districts.

Scale scores

NAEP economics results are reported as average scores on a 0–300 scale. NAEP scales are developed independently for each subject; scores cannot be compared across subjects. NAEP reports an overall economics score and scores in the three economics content areas. Because subscales are set separately for each content area (market, national, and international economies), comparisons cannot be made from one subscale to another. NAEP also reports scores at five percentiles to show student performance at lower (10th and 25th percentiles), middle (50th percentile), and higher (75th and 90th percentiles) levels.

Achievement levels

Based on recommendations from policymakers, educators, and members of the general public, the Governing Board sets specific achievement levels for each subject area and grade assessed. Achievement levels are performance standards showing what students should know and be able to do. NAEP results are reported as percentages of students performing below the *Basic* level, at or above the *Basic* and *Proficient* levels, and at the *Advanced* level.

Basic denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade.

Proficient represents solid academic performance. Students reaching this level have demonstrated competency over challenging subject matter.

Advanced represents superior performance.

As provided by law, the National Center for Education Statistics (NCES), upon review of congressionally mandated evaluations of NAEP, has determined that achievement levels are to be used on a trial basis and should be interpreted with caution. The NAEP achievement levels have been widely used by national and state officials.

Interpreting the Results

Results for the 2012 NAEP economics assessment are compared to results from the first assessment in 2006. NAEP reports results using widely accepted statistical standards; findings are reported based on a statistical significance level set at .05 with appropriate adjustments for multiple comparisons (see the Technical Notes for more information). An asterisk (*) is used in tables and figures to indicate that the 2006 score or percentage is significantly different from the 2012 results. Only those differences that are found to be statistically significant are discussed as higher or lower. The same standard applies when comparing the performance of one student group to another.

A score that is significantly higher or lower in comparison to an earlier assessment year is reliable evidence that student performance has changed; however, NAEP is not designed to identify the causes of these changes. Although comparisons are made in students' performance based on demographic characteristics and educational experiences, the results cannot be used to establish a cause-and-effect relationship between student characteristics and achievement. Many factors may influence student achievement, including educational policies and practices, available resources, and the demographic characteristics of the student body. Such factors may change over time and vary among student groups.

Exclusions and accommodations

It is important to assess all students from the population, including students with disabilities (SD) and English language learners (ELL). To accomplish this goal, many of the same accommodations that students use on other tests (e.g., extra testing time or individual rather than group administration) are provided for SD and ELL students participating in NAEP.

Even with the availability of accommodations, some students may be excluded. The exclusion rate for the 2012 economics assessment was 3 percent. More information about NAEP's policy on the inclusion of special-needs students is available at http://nces.ed.gov/nationsreportcard/about/inclusion.asp.

Economics Results — Online Resources

Find economics assessment results, analyze data, view sample questions and more with these helpful online resources.

Economics Highlights on the Web
Find an online overview of results and scores.
http://nationsreportcard.gov/economics_2012/

The NAEP Data Explorer
View all data from the NAEP economics assessment and generate customized tables.
http://nces.ed.gov/nationsreportcard/naepdata/

NAEP Economics Assessment Questions
Review all released questions, scoring guides, and sample student responses from the 2012 assessment.
http://nces.ed.gov/nationsreportcard/itmrlsx/search.aspx?subject=economics

NAEP Economics Framework
Learn how the NAEP economics assessment is designed to measure twelfth-grade students' knowledge and skills.
http://www.nagb.org/content/nagb/assets/documents/publications/frameworks/economics-framework-2012.pdf

Economics Results

Some of the nation's lowest performing students made progress between 2006 and 2012 on NAEP's economics assessment, including students from groups typically considered disadvantaged. Despite these gains, the overall score for twelfth-graders did not change significantly since 2006. The results that follow provide insight into the condition of economics education nationwide, which may spur informed discussions and focused research about the economic literacy of high school seniors.

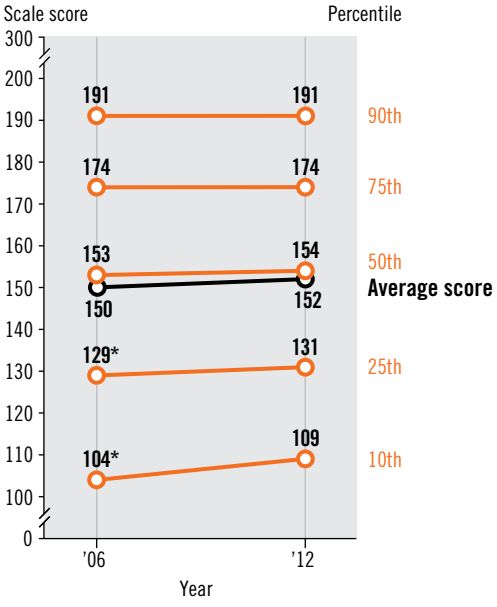
Lower performing students make gains in 2012

Scores for lower performing students at the 10th and 25th percentiles increased from 2006 to 2012 while there were no significant changes in the scores for middle and higher performing students (**figure 1**). A similar pattern of gains among lower performing students is evident in the achievement-level results. As shown below (**figure 2**), the percentage of students performing below *Basic* decreased from 2006 to 2012. This would also indicate that the total percentage of students performing at or above *Basic* (which includes *Proficient* and *Advanced*) increased from 79 percent in 2006 to 82 percent in 2012. There was not a gain, however, at or above *Proficient*—the level defined by the Governing Board as representing competency over challenging subject matter.

Results Available in Each Content Area

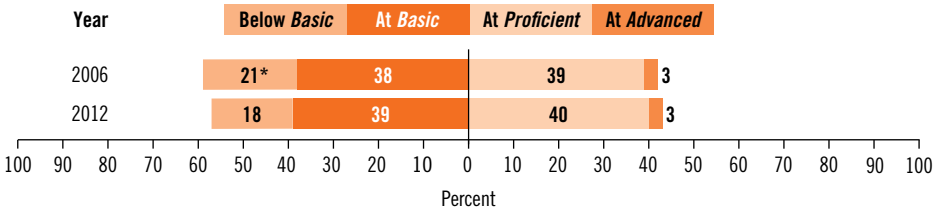
In addition to overall performance results, results are reported for each content area (market, national, and international economies). These results are presented for the nation and for selected student groups in appendix **table A-1**.

Figure 1. Average scores and percentile scores in twelfth-grade NAEP economics: 2006 and 2012



* Significantly different ($p < .05$) from 2012.

Figure 2. Achievement-level results in twelfth-grade NAEP economics: 2006 and 2012



* Significantly different ($p < .05$) from 2012.
NOTE: Detail may not sum to totals because of rounding.

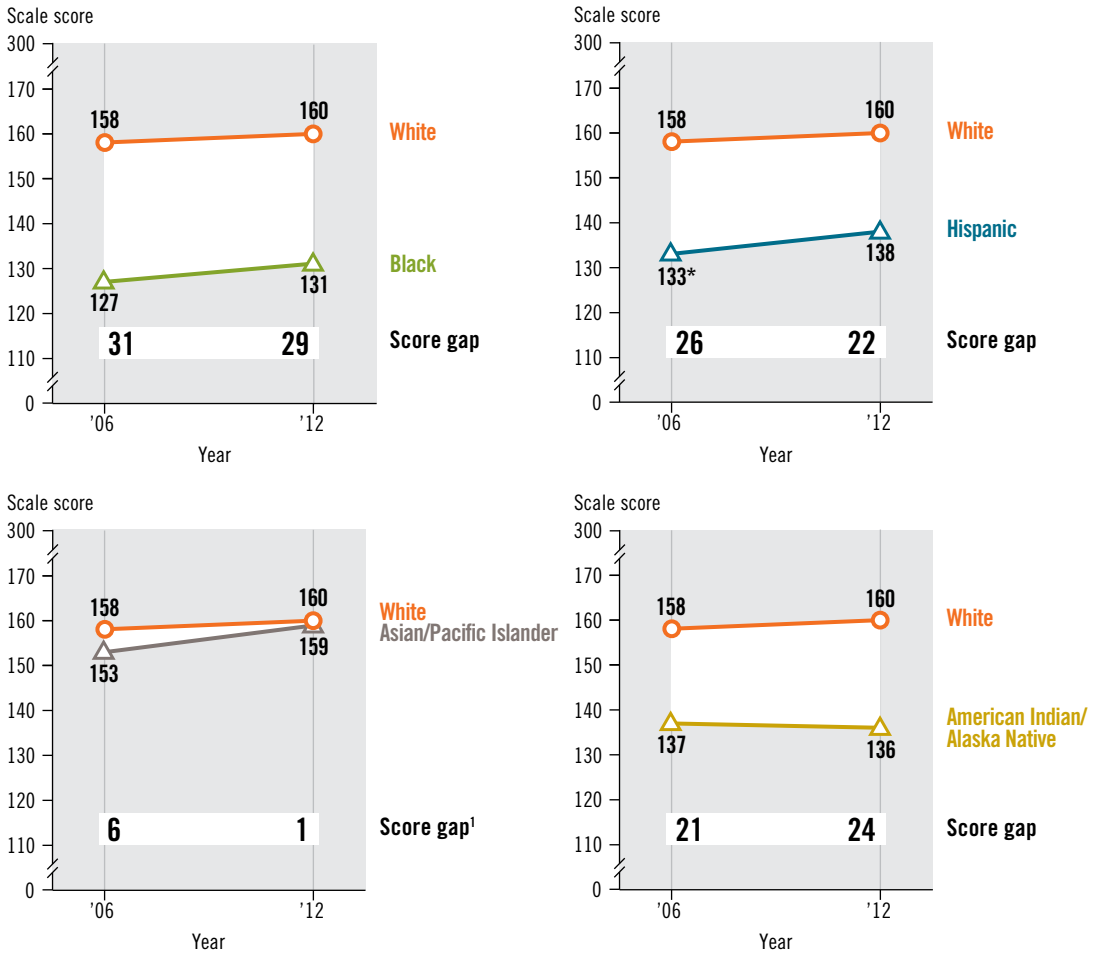
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2006 and 2012 Economics Assessments.

Hispanic students improve, but score gaps persist

Of the five racial/ethnic categories, one of the typically lower performing groups showed progress (**figure 3**). Hispanic students increased their average score between 2006 and 2012 overall and in the national economy content area (see appendix **table A-1**). The apparent increase for Black students was not statistically significant, and there were no significant changes in average scores among other racial/ethnic groups.

Despite improvements for Hispanic students, achievement gaps remained in 2012. Black, Hispanic, and American Indian/Alaska Native students continued to perform lower than White and Asian/Pacific Islander students—and there was no statistically significant change in the size of these score gaps since 2006.

Figure 3. Average scores and score gaps in twelfth-grade NAEP economics, by selected racial/ethnic groups: 2006 and 2012



* Significantly different ($p < .05$) from 2012.

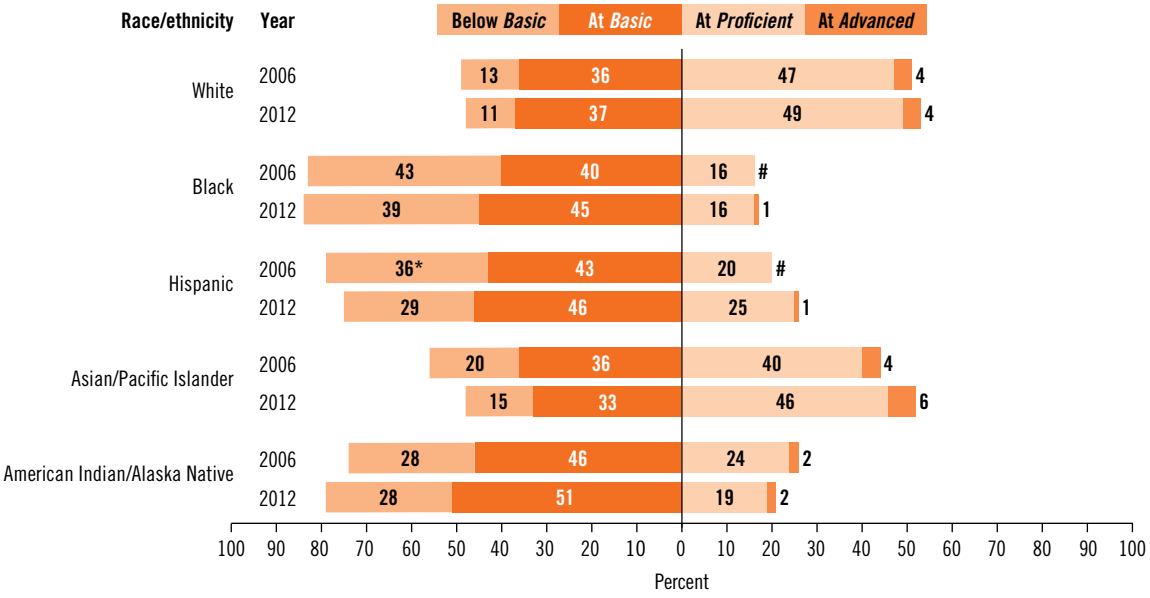
[1] The score differences between White and Asian/Pacific Islander students were not found to be statistically significant in 2006 and 2012.

NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. Score gaps are calculated based on differences between unrounded average scores.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2006 and 2012 Economics Assessments.

Mirroring the scale score findings of the racial/ethnic groups, Hispanic students were also the only racial/ethnic group to show improvement in the achievement-level results. The percentage of Hispanic students performing at or above the *Basic* level increased from 64 percent in 2006 to 71 percent in 2012 (**figure 4**). There were no significant changes from 2006 to 2012 in the percentages of other racial/ethnic groups performing at or above *Basic* and *Proficient* or at the *Advanced* level.

Figure 4. Achievement-level results in twelfth-grade NAEP economics, by selected racial/ethnic groups: 2006 and 2012



Rounds to zero.
* Significantly different ($p < .05$) from 2012.
NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. Detail may not sum to totals because of rounding.

NAEP Results for Newly Reported Racial/Ethnic Groups

In compliance with revised standards from the U.S. Office of Management and Budget for collecting and reporting data on race/ethnicity, additional information on students' race/ethnicity was collected in 2012 so that results could be reported separately for Asian students and students categorized as being two or more races (multiracial). The number of Native Hawaiian/Other Pacific Islander students participating in the 2012 economics assessment was too small to report reliable results as a separate group. (See the Technical Notes for more information.)

In 2012, the average economics scores for Asian students and multiracial students were both higher than the scores for Black, Hispanic, and American Indian/Alaska Native students, and not significantly different from each other or from the score for White students (**table 1**).

Table 1. Percentage of students, average scores, and achievement-level results in twelfth-grade NAEP economics, by race/ethnicity: 2012

Race/ethnicity	Percentage of students	Average scale score	Percentage of students			
			Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
White	61	160	11	89	53	4
Black	15	131	39	61	16	1
Hispanic	16	138	29	71	25	1
Asian	6	160	14	86	53	6
Native Hawaiian/Other Pacific Islander	#	‡	‡	‡	‡	‡
American Indian/Alaska Native	1	136	28	72	20	2
Two or more races	2	154	13	87	42	3

Rounds to zero.
‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.
NOTE: Black includes African American, and Hispanic includes Latino. Race categories exclude Hispanic origin. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2006 and 2012 Economics Assessments.

About the Questionnaire

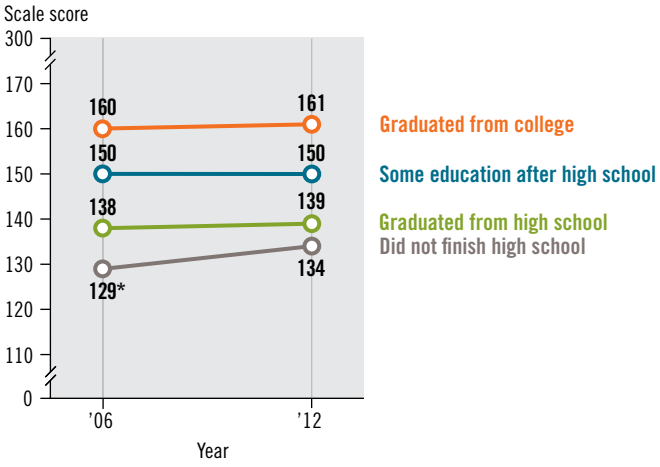
Twelfth-graders indicated their parents' highest level of education when responding to the student questionnaire. The five response options were: did not finish high school, graduated from high school, some education after high school, graduated from college, and don't know. Results are reported for the highest level of education for either parent.

Score gains for students whose parents did not finish high school

Twelfth-graders who reported higher levels of parental education had higher average economics scores than those who reported lower levels. For example, students who indicated at least one parent graduated from college scored higher on average than those whose parents did not.

Only the students who reported the parental education level as did not finish high school scored higher in 2012 than in 2006 (**figure 5**). More than half (52 percent) were Hispanic students, even though Hispanic students were 16 percent of the population nationally.

Figure 5. Average scores in twelfth-grade NAEP economics, by highest level of parental education: 2006 and 2012

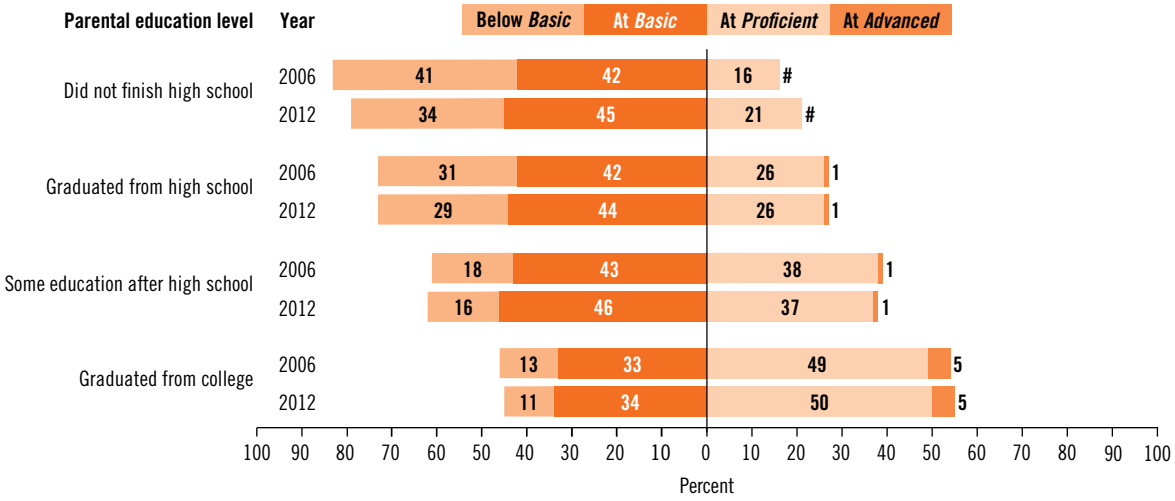


* Significantly different ($p < .05$) from 2012.
NOTE: Results are not shown for students who reported that they did not know the highest education level for either of their parents.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2006 and 2012 Economics Assessments.

Students who reported higher levels of parental education were also more likely to perform at or above the *Proficient* level than students who reported lower levels of parental education. The percentages of students performing at each achievement level did not change significantly from 2006 to 2012 regardless of the highest level of education completed by either parent (**figure 6**).

Figure 6. Achievement-level results in twelfth-grade NAEP economics, by highest level of parental education: 2006 and 2012



Rounds to zero.
NOTE: Results are not shown for students who reported that they did not know the highest education level for either of their parents. Detail may not sum to totals because of rounding.

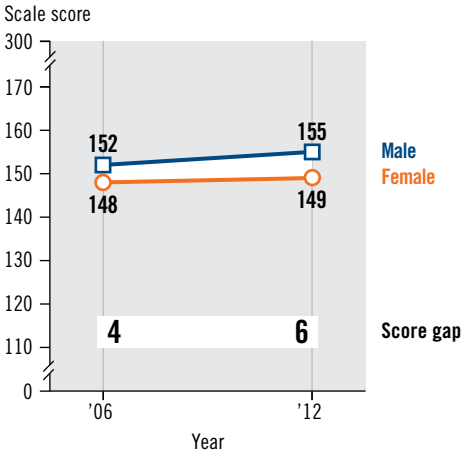
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2006 and 2012 Economics Assessments.

Gender gap remains in 2012

Male twelfth-graders continued to score higher than their female peers in 2012, with no significant change in the score gap from 2006 (**figure 7**). In addition, male students were more likely than female students to perform at or above the *Basic* and *Proficient* levels and at *Advanced* in 2012 (**figure 8**).

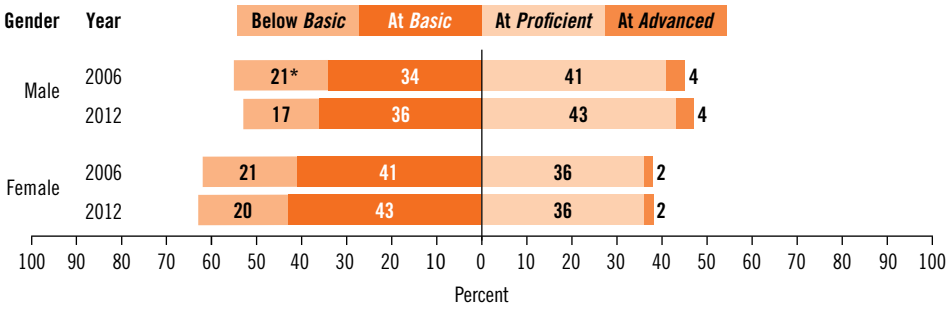
A higher percentage of male students (83 percent) performed at or above the *Basic* level in 2012 than in 2006 (79 percent). There was no significant change for female students at any achievement level.

Figure 7. Average scores and score gaps in twelfth-grade NAEP economics, by gender: 2006 and 2012



NOTE: Score gaps are calculated based on differences between unrounded average scores.

Figure 8. Achievement-level results in twelfth-grade NAEP economics, by gender: 2006 and 2012



* Significantly different ($p < .05$) from 2012.
NOTE: Detail may not sum to totals because of rounding.

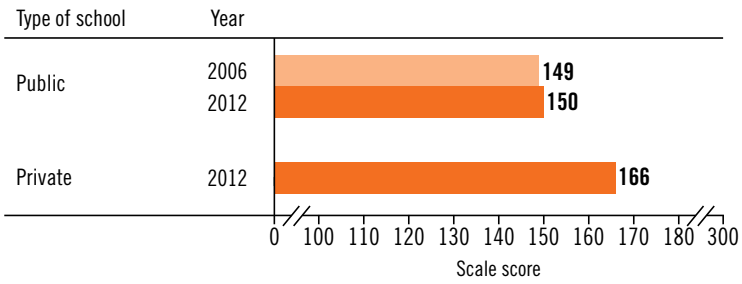
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2006 and 2012 Economics Assessments.

Private school students score higher than public school students

Approximately 92 percent of twelfth-graders in the United States attended public schools and 8 percent attended private schools in 2012. As with other NAEP assessments, public school students scored lower on average in economics than private school students. About half of private school students attended Catholic schools. They also scored higher on average than public school students. See appendix **table A-1** for more detail on results for Catholic school students.

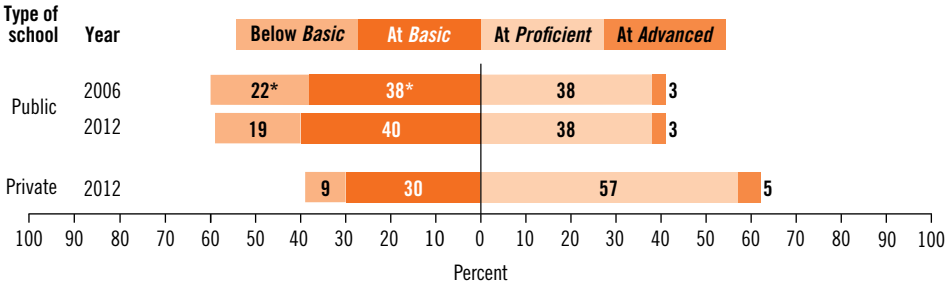
There was no significant change in the score for public school students from 2006 to 2012 (**figure 9**); however, a larger percentage of these students reached the *Basic* achievement level compared to 2006 (**figure 10**). Results are not available for private schools in 2006 because their participation rate was below NAEP reporting standards in that year.

Figure 9. Average scores in twelfth-grade NAEP economics, by type of school: 2006 and 2012



NOTE: Private schools include Catholic, other religious, and nonsectarian private schools.

Figure 10. Achievement-level results in twelfth-grade NAEP economics, by type of school: 2006 and 2012



* Significantly different ($p < .05$) from 2012.
NOTE: Private schools include Catholic, other religious, and nonsectarian private schools. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2006 and 2012 Economics Assessments.

Context for Learning

About the Questionnaire

Students answered questions about whether the economics courses they have taken in high school helped them understand the U.S. economy, the international economy, current events and public policy, and personal finances. They could select one of four responses for each question: "strongly disagree," "somewhat disagree," "somewhat agree," and "strongly agree." For the purpose of reporting, the data were collapsed into two categories: "agree" and "disagree."

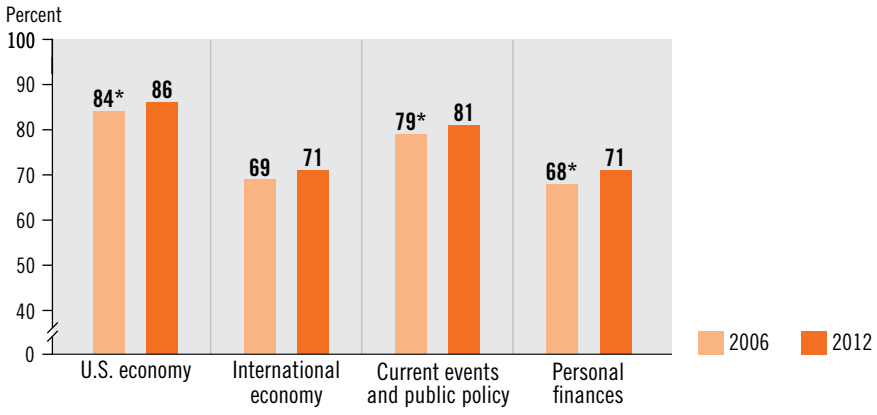
Do high school seniors think that coursework helps them understand economic topics? Are high school seniors so interested in economics that they seek information about it outside of school? And what sources do they rely on for economic information? Responses to these questions provide a profile of students' attitudes toward the study of economics as well as the extent of their engagement. Data from these questions indicate that students value their coursework, are sufficiently engaged to seek information on economics outside of school, and often use the Internet when seeking information. Overall, students' responses to these questions suggest they appreciate the importance of understanding economics.

Majority of students indicate coursework helps them understand economic topics

More than two-thirds of twelfth-graders reported that economics-related courses helped them comprehend each of the four topics listed in **figure 11**. Also shown in the figure, a greater percentage of students in 2012 than in 2006 said that their coursework helped them understand three of the four topics: U.S. economy, news about current events and public policy, and how to manage personal finances.

In 2012, students who agreed that courses in economics helped them understand the U.S. economy scored higher on average than those who did not agree (**figure 12**). This was also true for students who agreed that courses helped them understand news about current events and public policy.

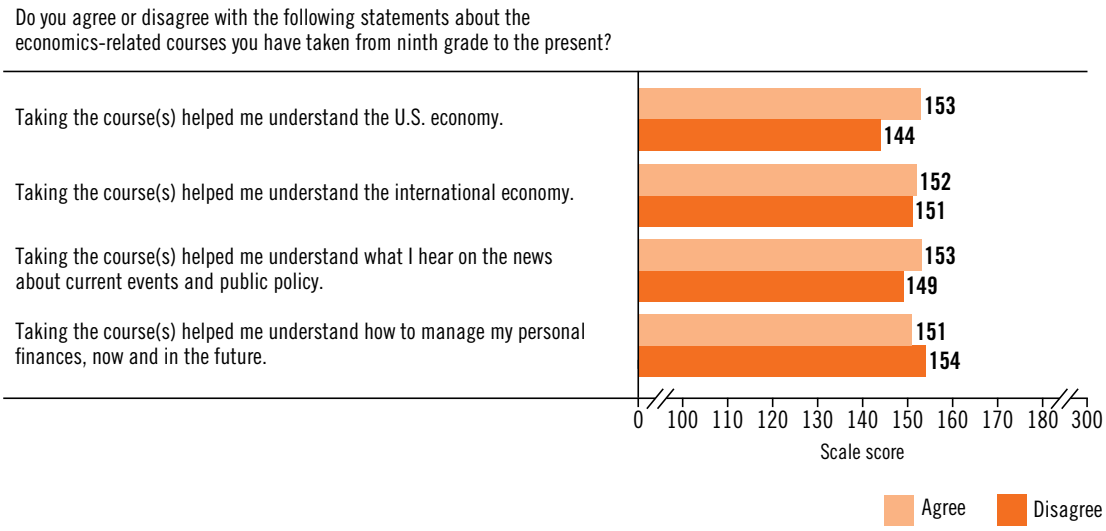
Figure 11. Percentage of students assessed in twelfth-grade NAEP economics who agreed that economics-related courses taken from ninth through twelfth grade helped them understand various topics: 2006 and 2012



* Significantly different ($p < .05$) from 2012.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2006 and 2012 Economics Assessments.

Figure 12. Average scores in twelfth-grade NAEP economics, by students' responses to a question that asked if they agreed or disagreed with various statements about economics-related courses they have taken: 2012



The proportion of students who agreed that economics courses helped them understand certain aspects of the economy varied somewhat by race/ethnicity in 2012 (**table 2**).

- Higher percentages of Black and Hispanic students than White and Asian students agreed that economics courses helped them understand personal finances.
- A higher percentage of Hispanic students than White and Black students agreed that economics courses helped them understand the international economy.

Table 2. Percentage of students assessed in twelfth-grade NAEP economics who agreed that economics-related courses taken from ninth through twelfth grade helped them understand various topics, by selected racial/ethnic groups: 2012

Topic	White	Black	Hispanic	Asian
U.S. economy	85	84	88	86
International economy	69	70	76	74
Current events and public policy	80	80	84	81
Personal finances	69	76	76	67

NOTE: Black includes African American, and Hispanic includes Latino. Race categories exclude Hispanic origin.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2012 Economics Assessment.

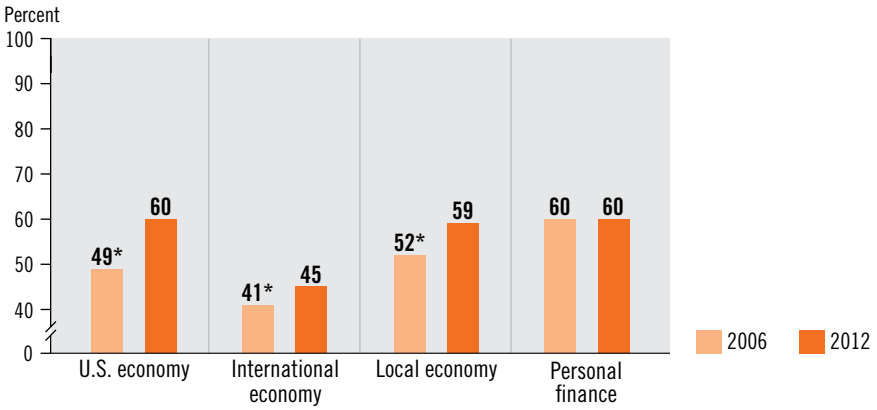
About the Questionnaire

Students were asked how frequently (outside of their school assignments) they watch, read about, or listen to information about the U.S., international, and local economies, as well as information about personal finance. They could select one of four responses for each topic: "never or hardly ever," "a few times a year," "once or twice a month," and "at least once a week." The data were collapsed into two categories: "A few times a year or less" and "At least once a month."

Higher percentages of students seek information about U.S., international, and local economies

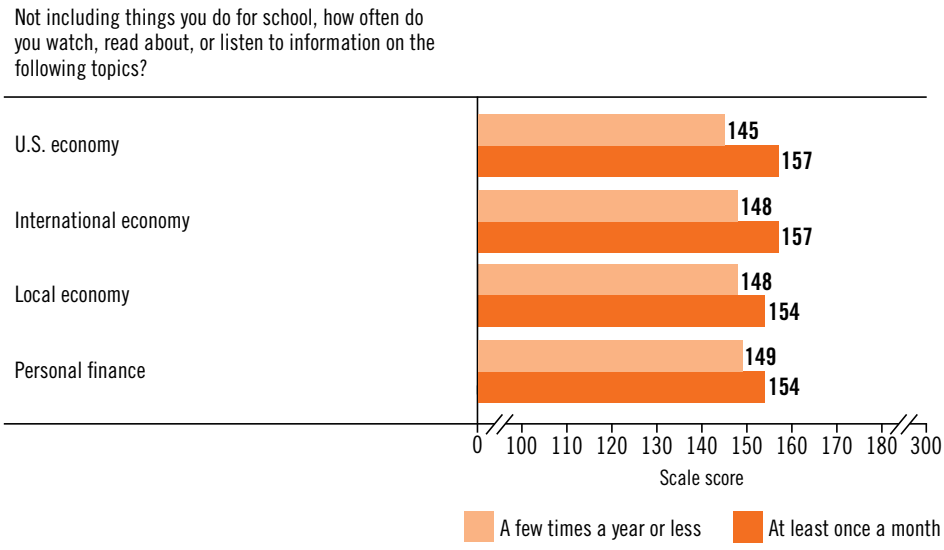
Opportunities to learn about economics extend well beyond the classroom. At a time when the economy was covered frequently in the news, the percentages of students seeking information about the U.S., international, and local economies increased from 2006 (**figure 13**). In addition, more than half of high school students reported using their own time to find information about the national economy, their local economy, or personal finance. In 2012, twelfth-graders who sought information about economics more frequently scored higher (**figure 14**).

Figure 13. Percentage of students assessed in twelfth-grade NAEP economics who reported that they watch, read about, or listen to information on various economics-related topics at least once a month on their own time: 2006 and 2012



* Significantly different ($p < .05$) from 2012.

Figure 14. Average scores in twelfth-grade NAEP economics, by students' responses to a question that asked how often they watch, read about, or listen to information on various economics-related topics on their own time: 2012



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2006 and 2012 Economics Assessments.

Use of the Internet by twelfth-graders to learn about economic issues increases

As information technologies evolve, so have the ways students access economic information. The percentage of students indicating they use the Internet to a large extent to learn about economic issues increased from 2006 to 2012 (**table 3**). The percentages of students who indicated that they use newspapers and magazines decreased from 2006.

In addition, the percentage of students who reported learning about economics from family and friends to a large extent increased, signaling that the economy may be a more frequent topic of conversation now than six years ago. Parental education levels may also influence how much students talk to their family and friends about economics. Although not shown here, students whose parents graduated from college were more likely to report learning about economics from family and friends than were students whose parents have not gone beyond high school.

Table 3. Percentage of students assessed in twelfth-grade NAEP economics, by students' responses to a question that asked to what extent they use various sources to learn about economic issues: 2006 and 2012

To what extent do you use the following sources to learn about economic issues?	2006	2012
Newspapers and magazines		
Not at all	19*	32
Small or moderate extent	69*	62
Large extent	12*	6
Radio and television		
Not at all	12	11
Small or moderate extent	60	60
Large extent	28	29
Internet		
Not at all	19*	10
Small or moderate extent	55*	51
Large extent	26*	39
Family and friends		
Not at all	15*	11
Small or moderate extent	63	63
Large extent	22*	26

* Significantly different ($p < .05$) from 2012.
NOTE: Detail may not sum to totals because of rounding.

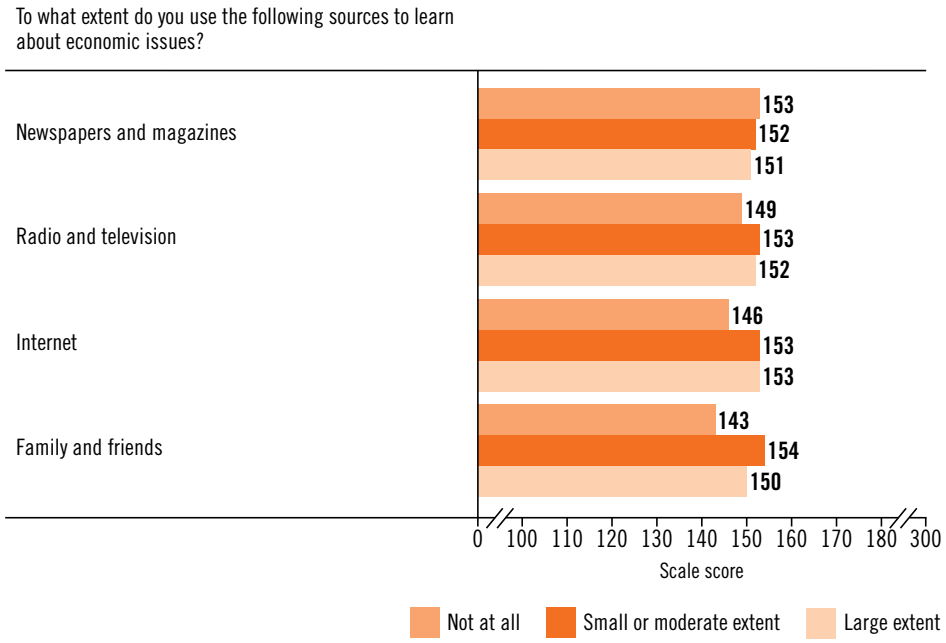
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2006 and 2012 Economics Assessments.

About the Questionnaire

Students were asked to what extent they learn about economics issues through newspapers and magazines, radio and television, the Internet, or family and friends. For each of these sources, students could select one of four responses: "not at all," "small extent," "moderate extent," and "large extent." For the purposes of reporting, the data were collapsed into three categories: "not at all," "small or moderate extent," and "large extent."

Two-thirds or more of students reported using various sources to gain information about economics. The use of two of these sources—the Internet and family and friends—showed a positive relationship to student performance (**figure 15**). Students who used the Internet or consulted with family and friends to at least a small extent to learn about the economy scored higher than those who did not.

Figure 15. Average scores in twelfth-grade NAEP economics, by students' responses to a question that asked to what extent they use various sources to learn about economic issues: 2012



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2012 Economics Assessment.

Assessment Content

This section presents NAEP economics achievement levels that outline what twelfth-graders are expected to know and be able to do. It also examines student performance on selected assessment questions from each content area and provides examples of what students performing at different levels were able to do.

Economics Achievement-Level Descriptions

The NAEP economics achievement-level descriptions presented below outline the expectations for students' performance at the *Basic*, *Proficient*, and *Advanced* levels. NAEP achievement levels are cumulative; therefore, students performing at the *Proficient* level also display the competencies associated with the *Basic* level, and students at the *Advanced* level demonstrate the skills and knowledge associated with both the *Basic* and the *Proficient* levels. The cut score indicating the lower end of the score range for each level is noted in parentheses.

Basic (123)

Students performing at the *Basic* level of achievement should be able to identify and recognize a limited set of economic concepts and relationships that are important for partial understanding of the market economy, national economy, and international economy. A limited set includes some of the following: (a) in the market economy—scarcity, opportunity cost, incentives, marginal decision-making, markets, prices, demand, supply, competition, economic institutions, income determination, entrepreneurship, investment, and government actions; (b) in the national economy—economic systems, money, interest rates, economic growth, gross domestic product, unemployment, inflation, fiscal policy, and monetary policy; and (c) in the international economy—comparative advantage, the benefits and costs of trade, and exchange rates. An example of the level of understanding that students should be able to demonstrate at the *Basic* level is the ability to recognize the inverse relationship between the market price of a product and the amount buyers are willing and able to purchase.

Students should be able to use a limited set of these economic concepts and relationships in simple applications. For example, when given data or information about an economic event or situation, they should be able to identify a likely economic outcome. Students should be able to interpret data or information presented in simple charts, graphs, or tables, such as those showing changes in economic data over time.

Proficient (160)

Students performing at the *Proficient* level of achievement should be able to identify and recognize a broader set of economic concepts and relationships that are important for solid understanding of the market economy, national economy, and international economy. A broader set includes many of the following: (a) in the market economy—scarcity, opportunity cost, incentives, marginal decision-making, markets, prices, demand, supply, competition, economic institutions, income determination, entrepreneurship, investment, and government actions; (b) in the national economy—economic systems, money, interest rates, economic growth, gross domestic product, unemployment, inflation, fiscal policy, and monetary policy; and (c) in the international economy—comparative advantage, the benefits and costs of trade, and exchange rates. An example of the level of understanding that students should be able to demonstrate at the *Proficient* level is the ability to explain the role of shortages in causing market prices to change.

Students should be able to use a broader set of these economic concepts and relationships in more challenging applications that involve analyzing economic problems and decisions, and recommending policies and actions. Students should be able to interpret data or information presented in complex charts, graphs, or tables, such as those relating changes in one or more economic variables to changes in other economic variables, and to analyze economic data and information to describe events and trends.

Advanced (208)

Students performing at the *Advanced* level of achievement should be able to identify and recognize an extensive set of economic concepts and relationships that are important for thorough understanding of the market economy, national economy, and international economy. An extensive set includes most of the following: (a) in the market economy—scarcity, opportunity cost, incentives, marginal decision-making, markets, prices, demand, supply, competition, economic institutions, income determination, entrepreneurship, investment, and government actions; (b) in the national economy—economic systems, money, interest rates, economic growth, gross domestic product, unemployment, inflation, fiscal policy, and monetary policy; and (c) in the international economy—comparative advantage, the benefits and costs of trade, and exchange rates. An example of the level of understanding that students should be able to demonstrate at the *Advanced* level is the ability to identify factors that increase or decrease the demand for a product and to explain the effects of these changes on price and quantity.

Students should be able to use these economic concepts and relationships in complex applications that involve analysis and evaluation of economic data and information to explain events and their causes, and policies and their outcomes. Students should be able to use data or information presented in complex charts, graphs, or tables in their analysis and evaluation.

What Twelfth-Graders Know and Can Do in Economics

The item map below shows how students perform at different levels on the NAEP economics scale. The scale scores on the left represent the scores for students who were likely to get items correct (in the case of a multiple-choice question) or who provided a response in the top-rated category (in the case of a constructed-response question). The cut score at the lower end of the range for each achievement level is boxed. The descriptions indicating what students needed to do to answer selected questions correctly are listed on the right, along with the corresponding content area. For example, the item map shows that students performing at the *Basic* level with a score of 153 were likely to be able to identify a factor in the marketplace that affects the price of goods. Students performing at the *Proficient* level with a score of 169 were likely to be able to provide a complete analysis of how competition among entrepreneurs fosters innovation and economic growth. Students performing at the *Advanced* level with a score of 247 were likely to be able to calculate the real interest rate given the current interest rate and the rate of inflation.

GRADE 12 NAEP ECONOMICS ITEM MAP

	Scale score	Content area	Question description
Advanced	300 //		
	279	**International economy**	Provide a superior analysis of issues related to the imposition of a tariff (see pages 28 and 29)
	264	**Market economy**	Identify and explain how a change in the price of a product affects quantity demanded (see pages 22 and 23)
	247	**National economy**	*Calculate the real interest rate given the current interest rate and the rate of inflation*
	226	**Market economy**	*Identify a public policy recommendation that is based on an appropriate cost-benefit analysis*
	224	**International economy**	Provide a complete analysis of factors influencing differences in GDP growth rates between countries
	220	**National economy**	*Identify an action to increase the money supply in the United States*
	219	**National economy**	Identify two economic costs of unemployment (see pages 26 and 27)
	213	**International economy**	*Identify how a change in the value of a currency affects imports and exports*
Proficient	**208**		
	207	**National economy**	*Recognize the consumer price index as a measure of inflation*
	200	**Market economy**	*Identify an example of an opportunity cost* (see page 24)
	199	**Market economy**	*Identify a form of business organization associated with given characteristics*
	193	**International economy**	*Identify the effect of changes in the U.S. economy on imports and exports*
	188	**National economy**	*Determine the result of changes in money supply versus changes in other economic factors*
	182	**International economy**	*Identify a way in which economic growth can reduce a nation's poverty level and increase its standard of living* (see page 30)
	169	**Market economy**	Provide a complete analysis of how competition by entrepreneurs creates innovation and economic growth
	163	**Market economy**	*Identify the effect of a price control upon the quantity of a product demanded*
Basic	**160**		
	158	**National economy**	Provide a complete analysis of an advantage and a disadvantage of a resource allocation system
	153	**International economy**	*Identify a factor associated with differences in growth rates between countries*
	153	**Market economy**	*Identify a factor in the marketplace that affects the price of goods*
	152	**National economy**	*Identify the impact of an increase in consumer spending upon employment* (see page 25)
	141	**Market economy**	*Recognize an action of government that protects property rights*
	133	**International economy**	*Identify a result of voluntary trade between countries*
	125	**Market economy**	*Identify a trait of a market economy*
	123		
	103	**Market economy**	*Identify the equilibrium price of a product from a supply and demand graph*
	94	**National economy**	*Identify the term describing changes in an economy*
	// 0		

NOTE: Regular type denotes a constructed-response question. *Italic* type denotes a multiple-choice question. The position of a question on the scale represents the scale score attained by students who had a 65 percent probability of successfully answering a constructed-response question, or a 74 percent probability of correctly answering a four-option multiple-choice question. For constructed-response questions, the question description represents students' performance rated as completely correct. Scale score ranges for economics achievement levels are referenced on the map.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2012 Economics Assessment.

Market Economy Content Area

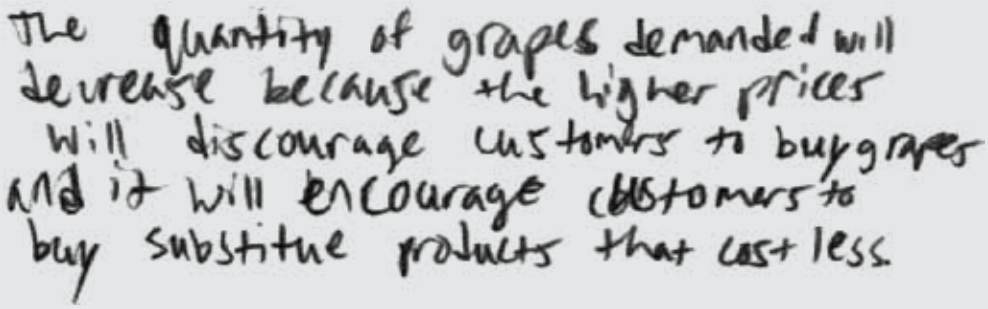
The market economy content area focuses on what is traditionally described as microeconomics. This content area addresses how individuals, businesses, and institutions make decisions about allocating limited resources in the marketplace where goods and services are bought and sold. Other key concepts covered include

- how buyers and sellers interact to create markets,
- how markets allocate resources, and
- the economic role the government has in a market economy.

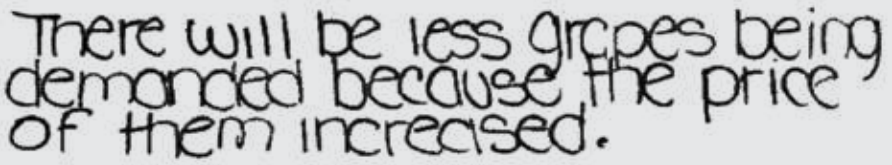
Sample question 1: Market economy

Suppose that the price of grapes increases by a large amount. What will happen in the short term to the quantity of grapes demanded? Explain why.

Response rated as "Correct"



Response rated as "Partially correct"



This constructed-response question from the 2012 NAEP economics assessment measures students' understanding about the signals and incentives that prices provide to buyers and sellers in the marketplace. The question focuses on the law of demand: when the prices of goods or services increase, individuals will look for substitute goods to avoid paying the higher price, and therefore, the quantity of goods or services demanded will fall. Conversely, when the prices of goods or services decrease, the quantity demanded will increase. The effects of increases or decreases in price upon quantity demanded will exist as long as other factors affecting demand do not change. Another explanation for the law of demand is based on the income effect: when prices increase, consumers have less purchasing power and therefore buy fewer units.

Student responses to this question were rated using three scoring levels. (Spelling and grammar were not considered in rating students' answers to constructed-response questions.)

Correct responses stated that the quantity demanded would decrease and provided a correct explanation.

Partially correct responses stated that the quantity demanded would decrease but failed to provide a correct explanation.

Incorrect responses did not indicate that the quantity demanded would decrease and failed to provide a correct explanation.

The student responses shown on the previous page were rated as "Correct" and "Partially correct." The response rated as "Correct" indicated that the quantity demanded would decrease and provides a correct explanation. Nine percent of students provided a correct response to this question. The response rated as "Partially correct" indicated that the quantity demanded would decrease, but did not provide a sufficient explanation. Seventy percent of students provided a partially correct response to this question.

Percentage of twelfth-grade students in each response category: 2012

Correct	Partially correct	Incorrect	Omitted
9	70	19	2

NOTE: Detail may not sum to totals because the percentage of responses rated as "Off-task" is not shown. Off-task responses are those that do not provide any information related to the assessment task.

The table below shows the percentages of twelfth-grade students within each achievement level whose responses to this question were rated as "Correct." For example, 14 percent of students at the *Proficient* level provided a response that was rated as "Correct."

Percentage of twelfth-grade students' responses rated as "Correct" at each achievement level: 2012

Overall	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*
9	1	4	14	‡

‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2012 Economics Assessment.

Sample question 2: Market economy

Which of the following best describes an opportunity cost for a student who chooses to quit a full-time job to go to college?

Ⓐ Paying state and federal income tax

Ⓑ Having a higher level of education

Ⓒ Giving up current wages and benefits

Ⓓ Paying for housing and meals

This multiple-choice question measures students' understanding about choices that individuals make in an economy. Because productive resources in an economy are limited, individuals must decide between various alternatives when determining which goods and services to consume. This question focuses on the application of the economic concept of opportunity costs—that is, the cost of passing up the next best choice when making a decision. Forty-three percent of twelfth-graders understood the definition of opportunity cost in this situation as the value of the best alternative given up by a student who chooses to leave the labor force in order to attend college (Choice C). Choices A and D are incorrect because they represent irrelevant factors and do not describe the value of the best alternative that a student would give up in this situation. Choice B is incorrect because it describes a benefit that the student would receive as a result of attending college, but does not describe an opportunity cost.

Percentage of twelfth-grade students in each response category: 2012

Choice A	Choice B	Choice C	Choice D	Omitted
5	45	43	7	#

Rounds to zero.
NOTE: Detail may not sum to totals because of rounding.

The table below shows the percentage of twelfth-grade students within each achievement level who answered this question correctly. For example, 34 percent of students at the *Basic* level selected the correct answer choice.

Percentage of twelfth-grade students responding correctly at each achievement level: 2012

Overall	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*
43	27	34	56	‡

‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2012 Economics Assessment.

National Economy Content Area

The national economy content area covers what is traditionally described as macroeconomics. It focuses on the behavior of the economy as a whole—the sum of economic decisions that are made by individuals, businesses, and the government. Key concepts covered include

- the factors that influence changes in inflation, unemployment, output, and growth in the economy;
- the role of money and interest rates in an economy; and
- the mechanics and the appropriate uses of Federal Reserve monetary policies and government fiscal policies.

Sample question 3: National economy

Which of the following changes is most likely to cause an increase in employment?

Ⓐ An increase in consumer spending

Ⓑ An increase in interest rates

Ⓒ A decrease in business investment

Ⓓ A decrease in income

This question measures students' understanding of the factors affecting the gross domestic product (GDP) of a country. Seventy-four percent of twelfth-graders were able to understand that when consumer spending rises, the resulting increase in demand for products and services will most likely cause the demand for labor to increase (Choice A). The changes described in Choices B, C, and D are incorrect because they would most likely have a negative effect on the employment rate in an economy.

Percentage of twelfth-grade students in each response category: 2012

Choice A	Choice B	Choice C	Choice D	Omitted
74	9	10	7	#

Rounds to zero.
NOTE: Detail may not sum to totals because of rounding.

The table below shows the percentage of twelfth-graders within each achievement level who answered this question correctly. For example, 88 percent of students at the *Proficient* level selected the correct answer choice.

Percentage of twelfth-grade students responding correctly at each achievement level: 2012

Overall	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*
74	41	74	88	‡

‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2012 Economics Assessment.

Sample question 4: National economy

A high rate of unemployment that lasts for several years has economic costs for a nation. What are two of these economic costs?

1) One of these economic costs could include the government's budget for unemployment checks. The more people will file for unemployment & more money will be demanded.

2) High unemployment means less income, which means less consumer spending. This in turn hurts companies such as restaurants & malls because they don't have as much business due to lack of buyers.

This constructed-response question measures students' understanding of unemployment. Responses to this question were rated using three scoring levels.

Correct responses described two economic costs of unemployment in an economy.

Partially correct responses described one economic cost of unemployment in an economy.

Incorrect responses did not describe any economic costs of unemployment in an economy.

The student response shown on the previous page was rated as "Correct" because it provided two economic costs of a high rate of unemployment. The first economic cost described in the response relates to expenses incurred by governments when providing financial support to the unemployed. The second economic cost refers to a decrease in aggregate demand in the economy that is caused because of lower consumer incomes. Other acceptable correct responses for economic costs included: loss of tax revenue to the government, increases in poverty, decreases in the standard of living, and increases in the cost of providing job training programs to the unemployed. Twenty-six percent of students provided a correct response to this question and 37 percent provided a partially correct response.

Percentage of twelfth-grade students in each response category: 2012

Correct	Partially correct	Incorrect	Omitted
26	37	22	14

NOTE: Detail may not sum to totals because the percentage of responses rated as "Off-task" is not shown. Off-task responses are those that do not provide any information related to the assessment task.

The table below shows the percentage of twelfth-grade students within each achievement level whose responses to this question were rated as "Correct." For example, among students performing at the *Basic* level, 20 percent provided a response that was rated as "Correct."

Percentage of twelfth-grade students' responses rated as "Correct" at each achievement level: 2012

Overall	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*
26	6	20	37	‡

‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2012 Economics Assessment.

International Economy Content Area

The international economy content area focuses on international trade—how individuals and businesses interact with global markets. Key concepts covered include:

- the reasons why individuals and businesses specialize their production and trade with one another;
- the comparison of benefits and costs of specialization and trade for consumers, producers, and governments; and
- the factors that influence exchange rates and the effects of exchange rates on individuals.

Sample question 5: International economy

Explain why United States steel manufacturers would support a tariff on imported steel.

They would support a tariff on imported steel because the price of imported steel would increase, so people would use more U.S. steel.

Explain why United States steel workers would support a tariff on imported steel.

They would support it because if imported steel is more expensive and people buy U.S. steel, then the U.S. steel companies will need more workers for the rising demand.

Explain why United States consumers would be hurt by a tariff on imported steel.

Consumers would be hurt because it would be often cheaper and the tariff would increase the price of the imported steel.

Explain why a steel tariff might be adopted even if it hurts United States consumers.

This might be adopted because the tariff would bring in money for the government through the tariff.

The constructed-response question shown on the previous page measures students' understanding of the costs and benefits of governmental policies. Student responses for this extended constructed-response question were rated using five scoring levels.

Superior responses provided acceptable answers for all four parts of the question.

Satisfactory responses provided acceptable answers for three parts of the question.

Partial responses provided acceptable answers for two parts of the question.

Minimal responses provided acceptable answers for one part of the question.

Incorrect responses failed to provide an acceptable answer for any part of the question.

The student response shown on the previous page was rated as "Superior" because it provided acceptable answers for all four parts of the question. Five percent of twelfth-graders provided a "Superior" response. Other acceptable responses for the first part of the question noted that domestic manufacturers would favor tariffs because it would tend to increase revenue and profits for domestic producers and would decrease foreign (import) competition in an industry. Additional acceptable responses for the second part of the question stated that domestic workers might favor tariffs because it could help increase wages. Some acceptable responses for the third part noted that U.S. consumers could be harmed by a tariff because they might pay higher prices for goods using steel as an input in their production. In the final part, some acceptable responses also included a discussion of the fact that tariffs are sometimes adopted to protect jobs in a given industry as part of the political process.

Percentage of twelfth-grade students in each response category: 2012

Superior	Satisfactory	Partial	Minimal	Incorrect	Omitted
5	31	23	18	15	7

NOTE: Detail may not sum to totals because the percentage of responses rated as "Off-task" is not shown. Off-task responses are those that do not provide any information related to the assessment task.

The table below shows the percentage of twelfth-graders within each achievement level whose responses to this question were rated as "Superior." For example, among students at the *Proficient* level, 8 percent provided responses rated as "Superior."

Percentage of twelfth-grade students' responses rated as "Superior" at each achievement level: 2012

Overall	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*
5	1	3	8	‡

‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2012 Economics Assessment.

Sample question 6: International economy

Which of the following is one way in which economic growth can help a nation reduce its poverty level and increase its standard of living?

Ⓐ Economic growth increases the demand for imports, thereby raising the demand for foreign exchange.

Ⓑ Economic growth increases the supply of labor, thereby increasing wages.

Ⓒ Economic growth increases disposable income, thereby decreasing the demand for luxury items.

Ⓓ Economic growth increases the demand for labor, thereby raising income levels.

This question measures students' knowledge of the relationship among a nation's investment, productivity, and growth. Fifty-five percent of twelfth-graders knew how wage rates are influenced by the labor market and chose the correct option (Choice D). When the economy is growing, aggregate demand increases, which raises the demand for labor. Employers will be willing to pay higher wages to attract the workers they need. Employment and incomes will rise, leading to declines in poverty and improvement in the nation's standard of living. Choice A is incorrect because increased demand for foreign exchange does not reduce the poverty level. Choice B is incorrect because the increase in the supply of labor does not increase wages. Choice C is also incorrect because while income levels could increase under conditions of economic growth, this would not cause a decrease in demand for luxury goods.

Percentage of twelfth-grade students in each response category: 2012

Choice A	Choice B	Choice C	Choice D	Omitted
11	25	9	55	1

NOTE: Detail may not sum to totals because of rounding.

The table below shows the percentage of twelfth-graders within each achievement level who answered this question correctly. For example, 45 percent of students at the *Basic* level selected the correct answer choice.

Percentage of twelfth-grade students responding correctly at each achievement level: 2012

Overall	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*
55	21	45	76	‡

‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2012 Economics Assessment.

Technical Notes

Sampling and Weighting

The schools and students participating in NAEP assessments are selected to be representative of all schools nationally. The results from the assessed students are combined to provide accurate estimates of the overall performance of students in public and private schools in the nation. More information on sampling can be found at http://nces.ed.gov/nationsreportcard/about/nathow.asp.

Because each school that participated in the assessment and each student assessed represents a portion of the population of interest, the results are weighted to account for the disproportionate representation of the selected sample. This includes oversampling of schools with high concentrations of students from certain racial/ethnic groups and the lower sampling rates of students who attend very small schools.

School and Student Participation

To ensure unbiased samples, NAEP statistical standards require that participation rates for the original school samples be 70 percent or higher to report national results separately for public and private schools. In instances where participation rates meet the 70 percent criterion but fall below 85 percent, a nonresponse bias analysis is conducted to determine if the responding school sample is not representative of the population, thereby introducing the potential for nonresponse bias.

The weighted national school participation rate for the 2012 twelfth-grade economics assessment was 87 percent (88 percent for public schools, 74 percent for private schools, and 86 percent for Catholic schools only). The weighted student participation rate was 85 percent.

A nonresponse bias analysis was conducted for the private school sample. The results of the analysis showed that, while the original responding private school sample may have been somewhat different from the entire sample of eligible schools, including substitute schools and adjusting the sampling weights to account for school nonresponse reduced the potential for nonresponse bias.

Although the weighted participation rate for public schools exceeded the 85 percent threshold, a nonresponse bias analysis was conducted for the public school sample because there were no participating public schools in Texas, which makes up approximately 9 percent of the public schools nationally. The original responding public school sample differed from the entire sample of eligible schools with respect to several variables; for instance, public schools in the south Census region were underrepresented in the responding sample. Including substitute schools in the assessment sample was not effective in reducing potential bias, as no substitute schools in Texas participated. However, adjusting the sampling weights to account for school nonresponse resulted in the reduction of potential nonresponse bias.

Because twelfth-grade participation rates for economics in 2006 fell below 70 percent for private and Catholic school samples, only the 2006 results for public schools are reported separately.

Interpreting Statistical Significance

Comparisons over time or between groups are based on statistical tests that consider both the size of the differences and the standard errors of the two statistics being compared. Standard errors are margins of error, and estimates based on smaller groups are likely to have larger margins of error. The size of the standard errors may also be influenced by other factors such as to what extent student groups are uniformly distributed over schools.

When an estimate has a large standard error, a numerical difference that seems large may not be statistically significant. Differences of the same magnitude may or may not be statistically significant depending upon the size of the standard errors of the estimates. For example, the 6-point change in the average score for Hispanic students was statistically significant, while the 6-point change for Asian/Pacific Islander students was not.[1] Standard errors for the estimates presented in this report are available at http://nces.ed.gov/nationsreportcard/naepdata/.

To ensure that significant differences in NAEP data reflect actual differences and not mere chance, error rates need to be controlled when making multiple simultaneous comparisons. The more comparisons that are made (e.g., comparing the performance of White, Black, Hispanic, Asian, Native Hawaiian/Other Pacific Islander, American Indian/Alaska Native, and students of two or more races), the higher the probability of finding significant differences by chance. In NAEP, the Benjamini-Hochberg False Discovery Rate (FDR) procedure is used to control the expected proportion of falsely rejected hypotheses relative to the number of comparisons that are conducted. A detailed explanation of this procedure can be found at http://nces.ed.gov/nationsreportcard/tdw/analysis/2000_2001/infer_multiplecompare_fdr.asp. NAEP employs a number of rules to determine the number of comparisons conducted, which in most cases is simply the number of possible statistical tests.

[1] Score-point changes are based on the differences between unrounded average scores.

Race/Ethnicity

Prior to 2011, student race/ethnicity was obtained from school records and reported for the following six mutually exclusive categories:

- White
- Black
- Hispanic
- Asian/Pacific Islander
- American Indian/Alaska Native
- Other or unclassified

Students identified with more than one racial/ethnic group were classified as "other" and were included as part of the "unclassified" category, along with students who had a background other than the ones listed or whose race/ethnicity could not be determined.

In compliance with standards from the U.S. Office of Management and Budget for collecting and reporting data on race/ethnicity, additional information was collected beginning in 2011. This allows results to be reported separately for Asian students, Native Hawaiian/Other Pacific Islander students, and students identifying with two or more races. All of the students participating in the NAEP assessments from 2011 forward were identified as belonging in one of the following seven racial/ethnic categories:

- White
- Black
- Hispanic
- Asian
- Native Hawaiian/Other Pacific Islander
- American Indian/Alaska Native
- Two or more races

As in earlier years, students identified as Hispanic continued to be classified as Hispanic even if they were also identified with another racial/ethnic group. Students identified with two or more of the other racial/ethnic groups (e.g., White and Black) would have been classified as "other" and reported as part of the "unclassified" category prior to 2011, and were classified as "two or more races" beginning in 2011.

When comparing the 2012 economics results for racial/ethnic groups with results from 2006, the 2012 data for Asian and Native Hawaiian/Other Pacific Islander students were combined into a single Asian/Pacific Islander category.

Appendix

Table A-1. Percentage of students and average scores in NAEP economics at grade 12, by selected characteristics: 2006 and 2012

Characteristic	Percentage of students		Overall average score		Average scores in content areas					
					Market economy		National economy		International economy	
	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012
All students	**100**	**100**	**150**	**152**	**150**	**151**	**150**	**152**	**150**	**151**
Race/ethnicity										
White	65	61	158	160	158	160	158	160	158	159
Black	13	15	127	131	128	130	127	131	129	131
Hispanic	14	16	133*	138	133	137	132*	139	133	140
Asian/Pacific Islander	6	6	153	159	153	158	153	159	152	161
Asian	—	6	—	160	—	159	—	160	—	161
Native Hawaiian/Other Pacific Islander	—	#	—	‡	—	‡	—	‡	—	‡
American Indian/Alaska Native	1	1	137	136	138	134	138	139	134	134
Two or more races	1*	2	150	154	151	153	152	155	143	154
Gender										
Male	50	50	152	155	152	154	152*	155	152	154
Female	50	50	148	149	148	148	148	149	148	149
Highest level of parental education										
Did not finish high school	7	8	129*	134	128*	134	129	135	133	135
Graduated from high school	18	17	138	139	138	139	137	140	138	140
Some education after high school	23	22	150	150	151	149	150	151	149	148
Graduated from college	49	50	160	161	160	161	161	162	160	161
Type of school										
Public	91	92	149	150	149	150	149	151	149	150
Private	‡	8	‡	166	‡	166	‡	166	‡	167
Catholic	‡	4	‡	166	‡	166	‡	165	‡	167
Status as students with disabilities (SD)										
SD	7*	9	116	121	114	120	117	121	120	123
Not SD	93*	91	153	155	153	154	153	155	152	154
Status as English language learners (ELL)										
ELL	3	3	110	101	110*	98	110	100	112	109
Not ELL	97	97	151	153	151	153	151	154	151	153

— Not available.
Rounds to zero.
‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.
* Significantly different ($p < .05$) from 2012.
NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. Results are not shown for students who reported that they did not know the highest education level for either of their parents. Private schools include Catholic, other religious, and nonsectarian private schools. SD includes students identified as having either an Individualized Education Program or protection under Section 504 of the Rehabilitation Act of 1973. Detail may not sum to totals because of rounding.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2006 and 2012 Economics Assessments.

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